

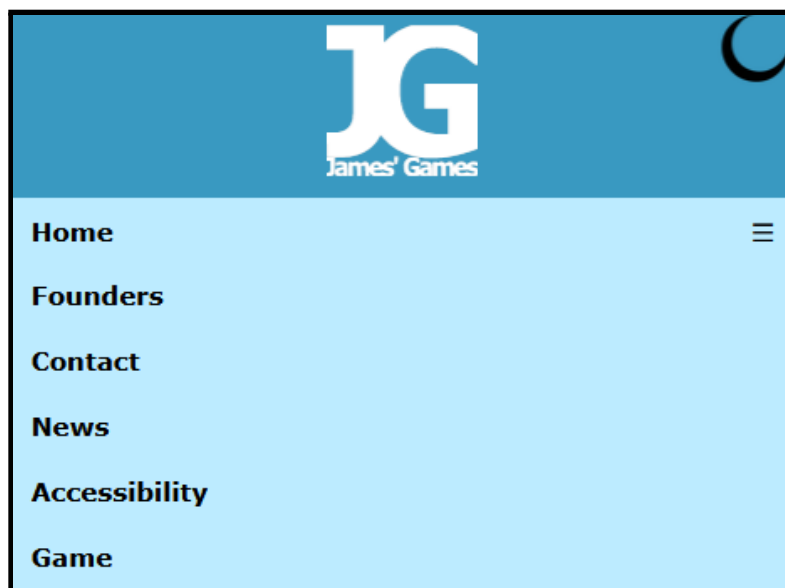
COM1008 Development & Testing

Changes

- Changed format of the website to add in dark mode toggle on every page in the top-right



- Added an outline to content div elements to make them stand out more (For both the header and paragraph) (Can be seen above)
- Made it so that the mobile navbar menu drops from below rather than the side as originally planned. Done so that the items are much easier to see on a mobile screen and the screen space used is pretty much the same



- Changed styling of the email form to make it stand out much more using CSS elements. Makes the form look much prettier and makes the elements more pleasant to look at

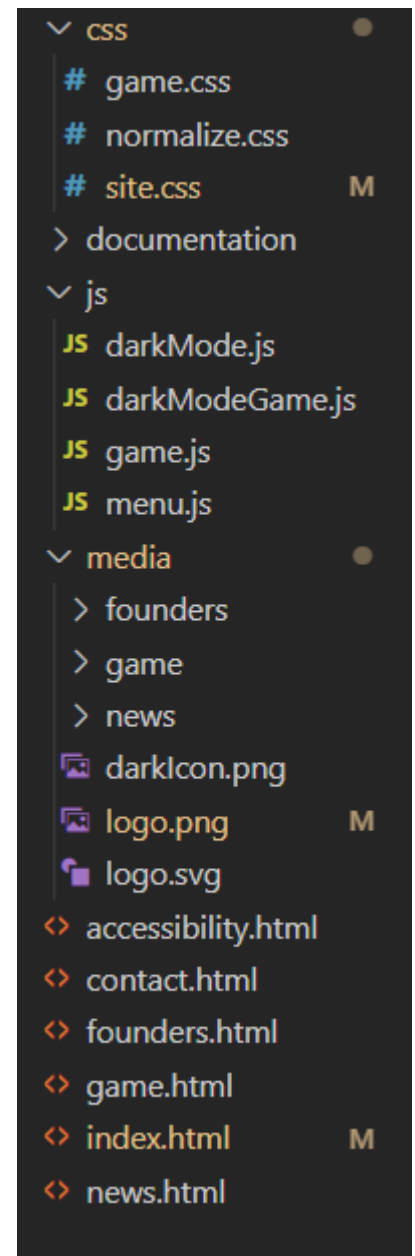
The image shows a web form with a light gray background and rounded corners. It is divided into three main sections: 'Email', 'Name', and 'Message'. Each section has a label in bold black text above a white input field. The 'Email' section has a placeholder 'type your email...'. The 'Name' section has a placeholder 'type your name...'. The 'Message' section has a placeholder 'Enter message here...' and a larger text area. At the bottom, there are two buttons: a blue 'Submit' button and a green 'Reset' button.

- For the JS game, made it so that I exclusively used images that I had taken myself to avoid any sort of copyright issues. For example, the cat image is now an image of my own cat.
- Also made it so that the feedback screen is no longer displayed on the canvas, but instead in a feedback screen off of the canvas. This was because the event listener I put on the canvas to move to the next question broke the event listener for the question, so a major bug fix through that workaround
- Changed the dimensions of the JS game so that it works primarily on mobile devices. The game dimensions stay the same between desktop and mobile rather than adjusting.



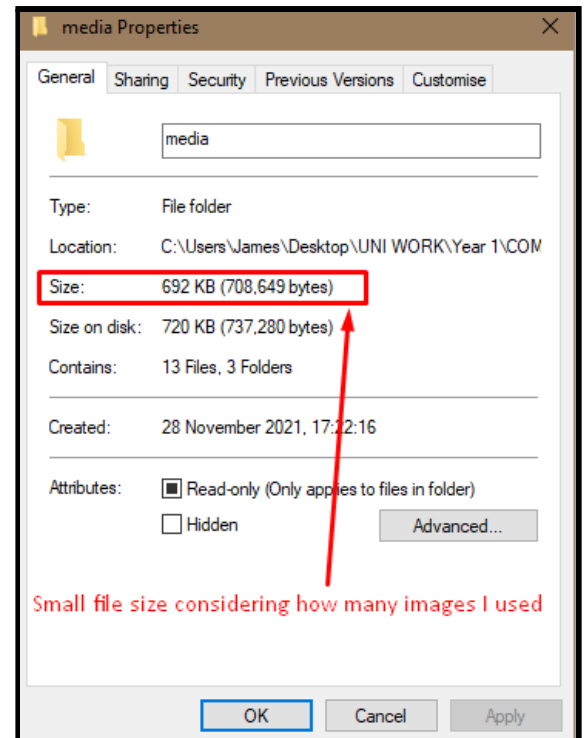
Organisation

- File Structure
 - All JS and CSS files were put in their own respective folders in the root. This was done so that the root folder was not cluttered and made using relative paths much easier
 - All images were put into a media folder, and then its own sub-directory based on what page the image was going to be used on.
 - All HTML files were just placed in the root as it made linking them relatively much easier if they were in the same folder
- Menu
 - Navbar was organised in the following order:
 - The index/home was first as it would always be the most frequently visited
 - Then founders as I thought it would be important to anthropomorphize the company
 - Then contact as it would be important for that to be near the start, as the point of the website is ultimately for feedback
 - After that, News and Accessibility, which I thought would be least frequently visited
 - Then finally the Game, right at the end so it would be just as visible as the homepage, as that is the showcase of the website and so would catch the users attention.



Optimisation

- I figured that using large images to display for the website would be inefficient, waste space and importantly make the game run worse as it would take longer to load the images. So I used the website TinyPNG (<https://tinypng.com/>) in order to compress the image sizes and make them as small as possible whilst still being clear for the game
- As well as this, I used an SVG file for the logo meaning that it would not become pixelated and ugly on smaller devices. To do this I used the illustration program Inkscape (<https://inkscape.org/>)
- I also made sure that, where possible, I used efficient CSS properties such as having elements share properties or not defining padding separately for each side etc.



```
.feedback{ /*Made to be ~ the same size as the canvas for a seamless experience*/
  width: 302px;
  height: 600px;
  padding: 1% 2.5% 1% 2.5%;
  background: lightgray;
  border-radius: 10px;
  border: 2px solid black;
  display: none; /*Initially hidden as there is no feedback yet*/
}
```

```
.content p, .content h1{
  border-radius: 15px;
  width:100%;
  border:2px solid #132e3a;
}
```

These two share the same properties, so I combined the CSS for them!

Security

- There were two main concerns regarding security for the website, which were naturally the two places where users could input data:
 - For the email input, I made it so that the PHP script provided by the university was used, so that the user could securely enter data with the correct validation, as well as since it was just mailing, no injection could really be done besides potential phishing on the end of myself receiving the emails, which is essentially unpreventable anyways.

```
<div class="emailForm">
  <form name="myform" id="myform"
    action="https://www.dcs.shef.ac.uk/cgi-intranet/public/FormMail.php"
    method="POST">
```

- For the game input, where the user enters their name, I made it so that the name category has a maximum length of 12 which meant that there is no space for injecting custom scripts or code as there simply isn't enough characters.

```
<div class="gameInput" id="gameInput">
  <p>Enter your name!
  <input type="text" id="name" required maxlength="12">
  <button class="gameInputSubmit"
    onclick="startGame()">Submit</button>
  </p>
</div>
```

Debugging

I made use of the W3C HTML and CSS validators (<https://validator.w3.org/>) and checked through every file I wrote. The results for every file can be seen below:

HTML

index.html:

Nu Html Checker

This tool is an ongoing experiment in better HTML checking, and its behavior remains subject to change

Showing results for index.html

Checker Input

Show ☐ source ☐ outline ☐ image report

Check by No file chosen

Uploaded files with .xhtml or .xht extensions are parsed using the XML parser.

Document checking completed. No errors or warnings to show.

Used the HTML parser.
Total execution time 14 milliseconds.

founders.html:

Nu Html Checker

This tool is an ongoing experiment in better HTML checking, and its behavior remains subject to change

Showing results for founders.html

Checker Input

Show ☐ source ☐ outline ☐ image report

Check by No file chosen

Uploaded files with .xhtml or .xht extensions are parsed using the XML parser.

Document checking completed. No errors or warnings to show.

Used the HTML parser.
Total execution time 21 milliseconds.

contact.html:

Nu Html Checker

This tool is an ongoing experiment in better HTML checking, and its behavior remains subject to change

Showing results for contact.html

Checker Input

Show ☐ source ☐ outline ☐ image report

Check by No file chosen

Uploaded files with .xhtml or .xht extensions are parsed using the XML parser.

Document checking completed. No errors or warnings to show.

Used the HTML parser.
Total execution time 13 milliseconds.

news.html:

Nu Html Checker

This tool is an ongoing experiment in better HTML checking, and its behavior remains subject to change

Showing results for news.html

Checker Input

Show

☐ source

☐ outline

☐ image report

Options...

Check by

file upload

Choose file

No file chosen

Uploaded files with .xhtml or .xht extensions are parsed using the XML parser.

Check

Document checking completed. No errors or warnings to show.

Used the HTML parser.

Total execution time 22 milliseconds.

accessibility.html

Nu Html Checker

This tool is an ongoing experiment in better HTML checking, and its behavior remains subject to change

Showing results for accessibility.html

Checker Input

Show

☐ source

☐ outline

☐ image report

Options...

Check by

file upload

Choose file

No file chosen

Uploaded files with .xhtml or .xht extensions are parsed using the XML parser.

Check

Document checking completed. No errors or warnings to show.

Used the HTML parser.

Total execution time 11 milliseconds.

game.html

Nu Html Checker

This tool is an ongoing experiment in better HTML checking, and its behavior remains subject to change

Showing results for game.html

Checker Input

Show

☐ source

☐ outline

☐ image report

Options...

Check by

file upload

Choose file

No file chosen

Uploaded files with .xhtml or .xht extensions are parsed using the XML parser.

Check

Document checking completed. No errors or warnings to show.

Used the HTML parser.

Total execution time 12 milliseconds.

CSS

game.css:

Nu Html Checker

This tool is an ongoing experiment in better HTML checking, and its behavior remains subject to change

Showing results for game.css

Checker Input

Show ☐ source ☐ outline ☐ image report

Check by

file upload No file chosen

Uploaded files with .xhtml or .xht extensions are parsed using the XML parser.

Document checking completed. No errors or warnings to show.

Total execution time 2 milliseconds.

site.css:

Nu Html Checker

This tool is an ongoing experiment in better HTML checking, and its behavior remains subject to change

Showing results for site.css

Checker Input

Show ☐ source ☐ outline ☐ image report

Check by

file upload No file chosen

Uploaded files with .xhtml or .xht extensions are parsed using the XML parser.

Document checking completed. No errors or warnings to show.

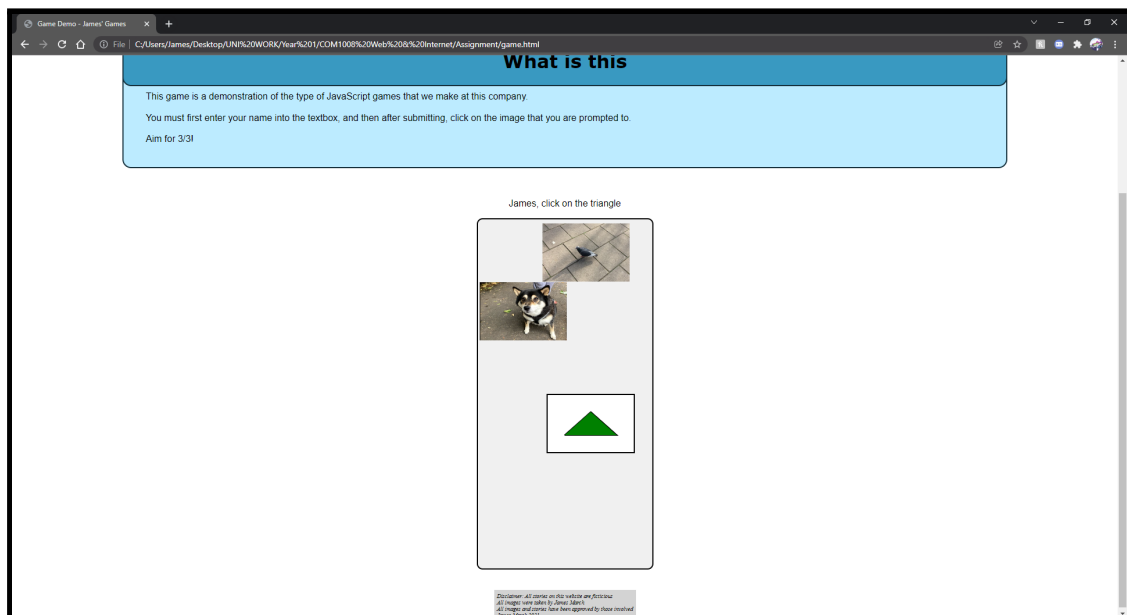
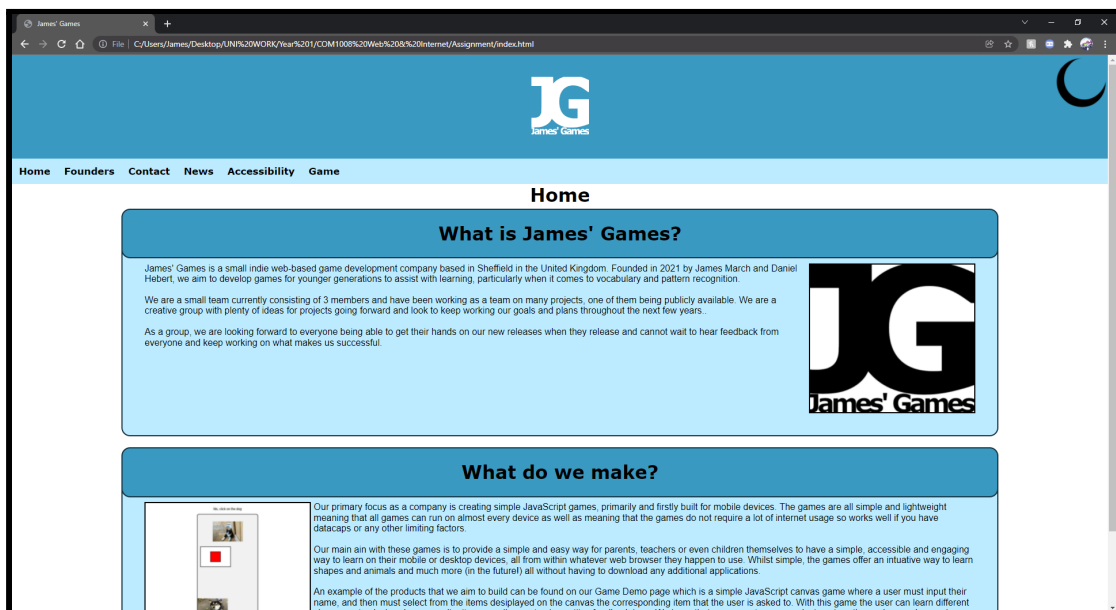
Total execution time 8 milliseconds.

The results of these validation checks show that there are no issues with my HTML or CSS code fundamentally and so they are of good enough quality for W3C to approve of them, which is a common standard for websites.

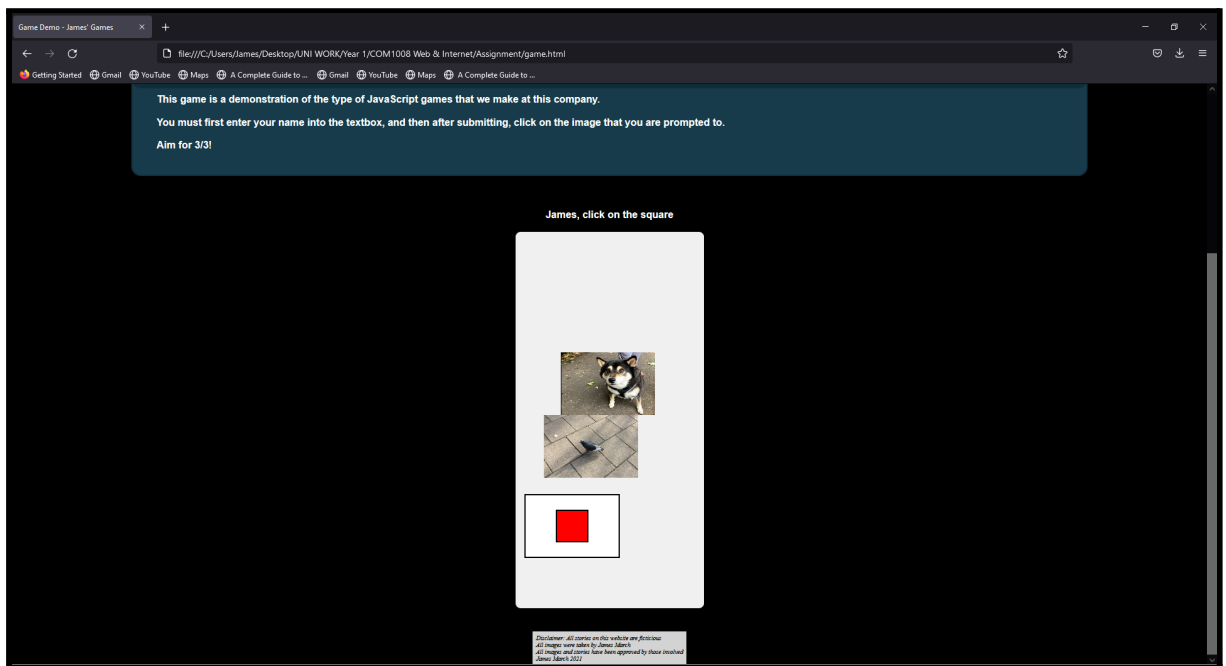
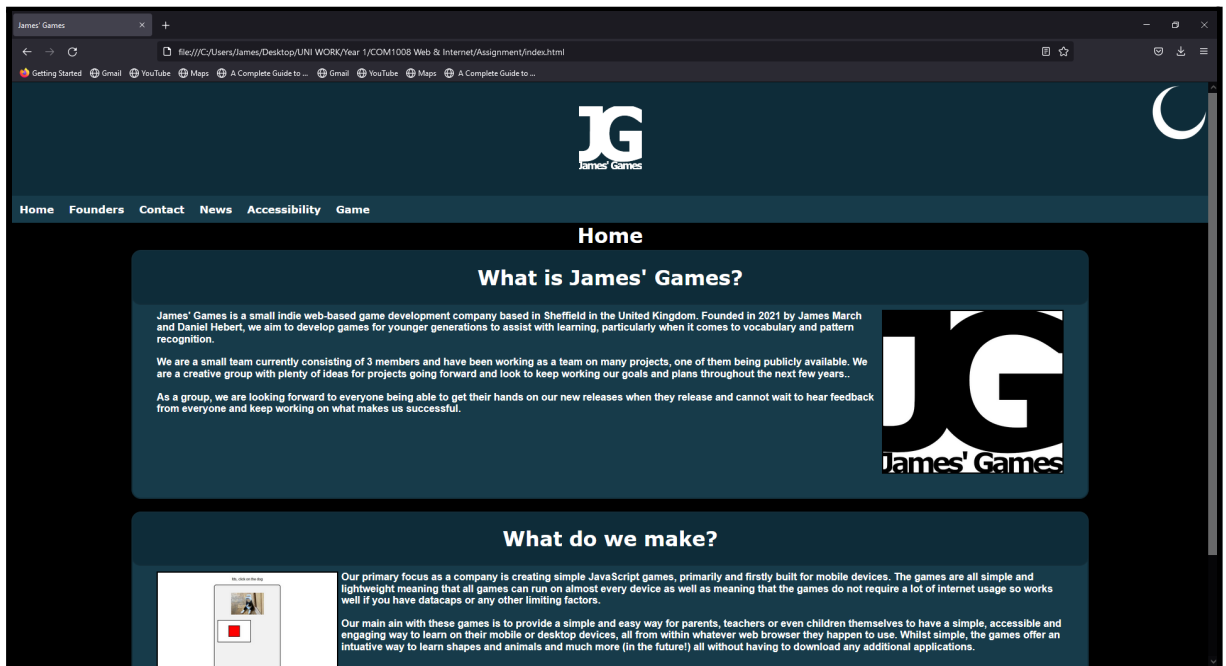
Testing

- For the purposes of this website, I did not have access to any Apple-made devices and so I could not test the website on Safari. However for the rest of testing I tried the website out on the most popular browsers I had access to, those being Google Chrome, Mozilla Firefox, Microsoft Edge and Opera.
- Thankfully because of the use of the normalize stylesheet (<https://nicolasgallagher.com/about-normalize-css/>) the performance and appearance were consistent across all browsers.

Google Chrome:



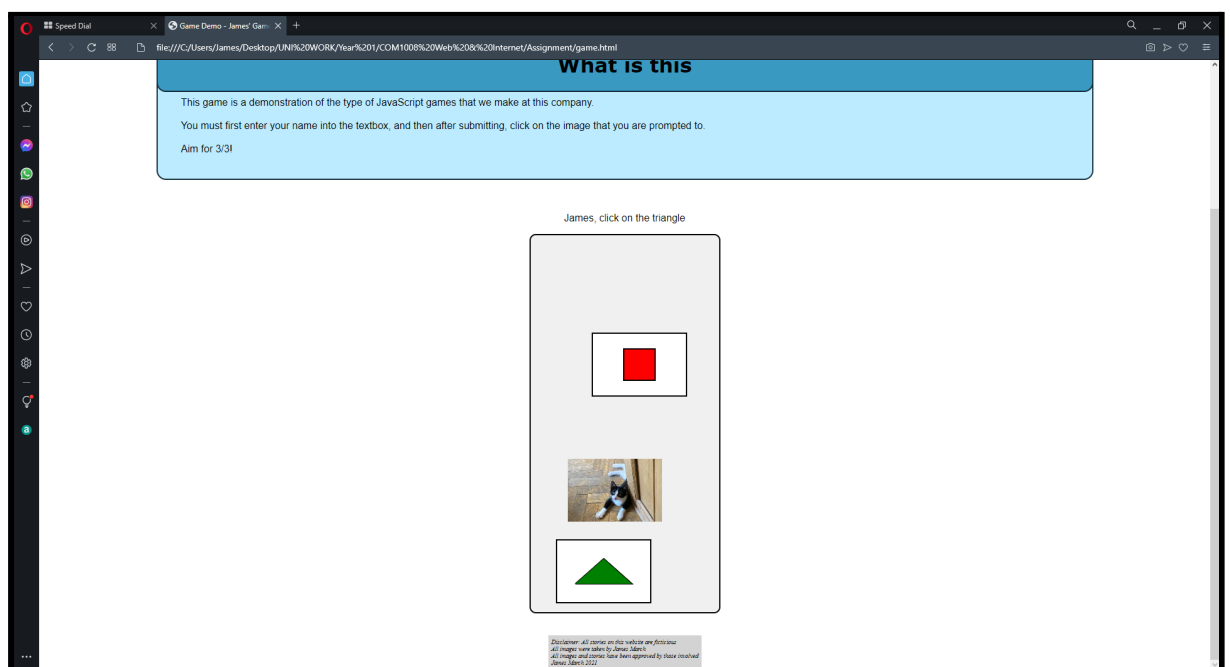
Mozilla Firefox
(Done in dark mode to show it in action!)



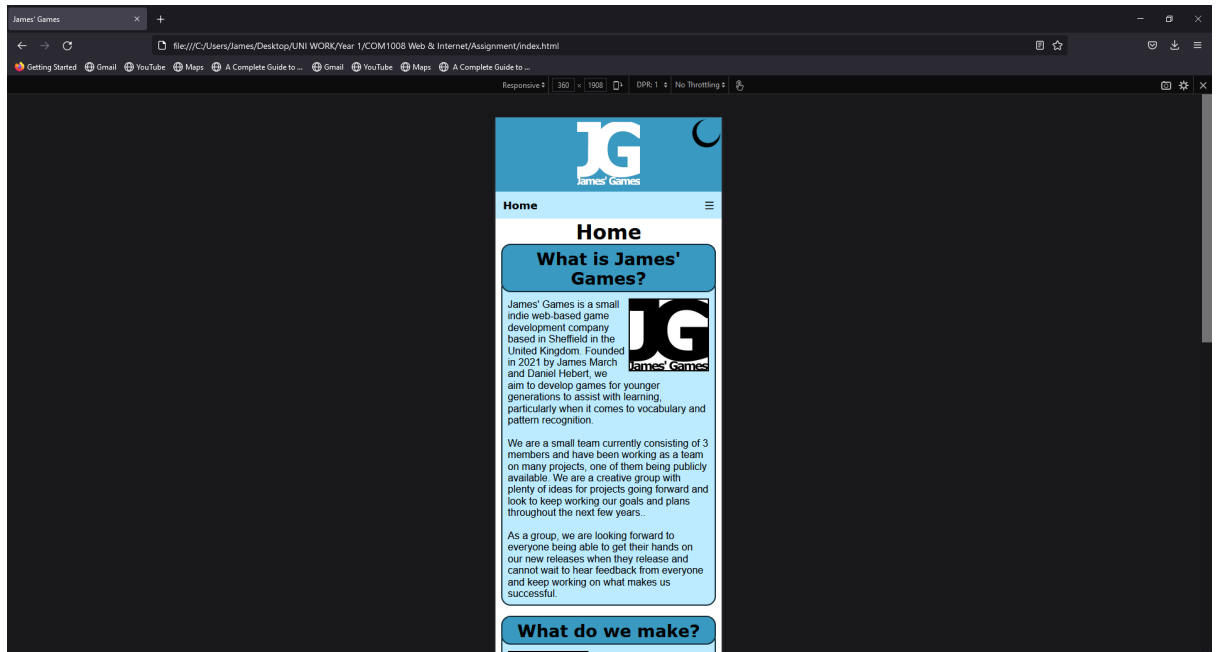
Microsoft Edge:

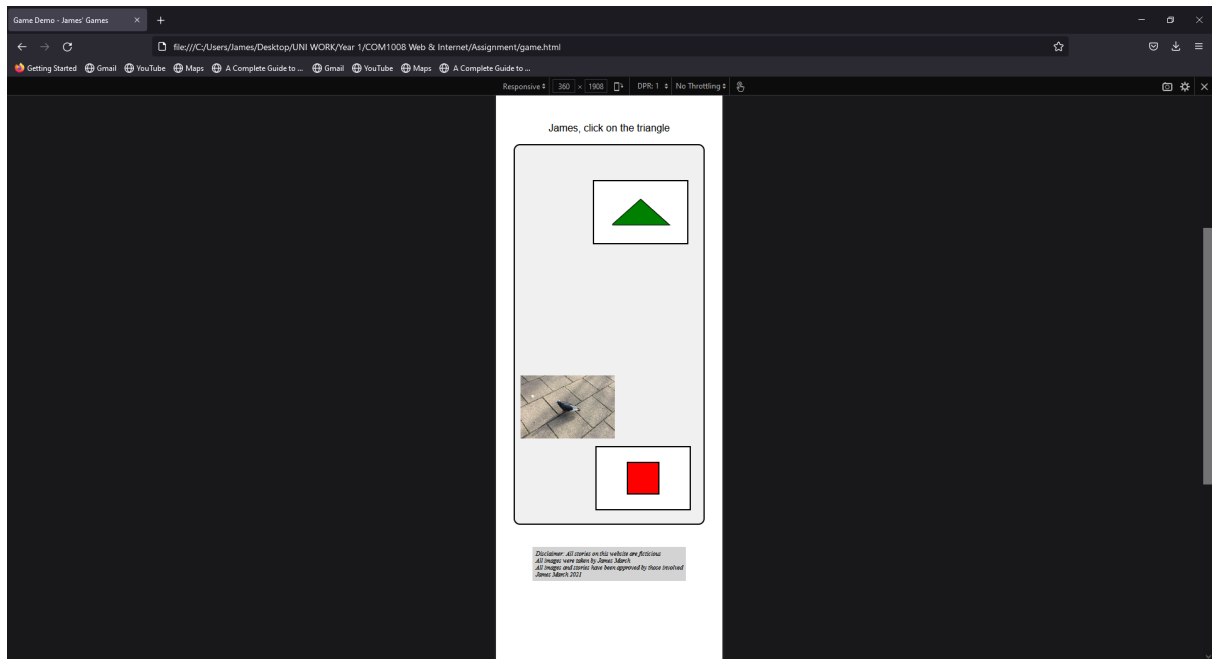


Opera:

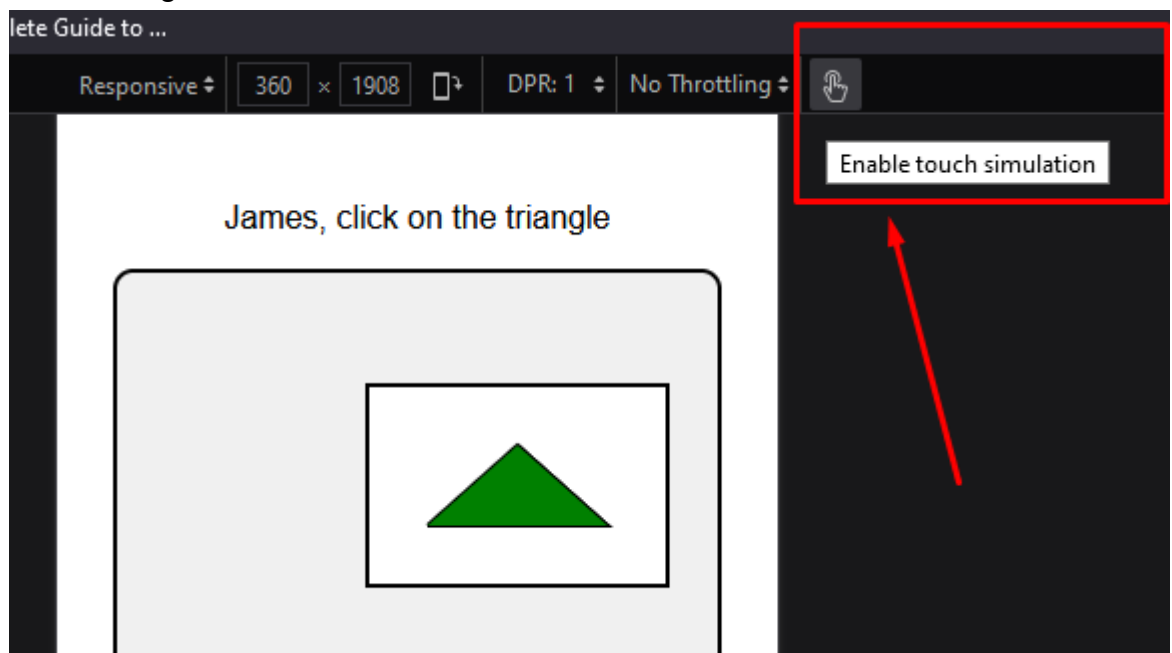


- When it came to testing for mobile, I made use of the Mozilla responsive design mode found in its web browser (https://developer.mozilla.org/en-US/docs/Tools/Responsive_Design_Mode)
- Using this I was able to test the website on a range of different devices.
- When designing the website, I had the minimum mobile width that I'd test for be 360px, as that is the lowest pixel width still commonly used on smartphones (source: <https://www.hobo-web.co.uk/best-screen-size/>)

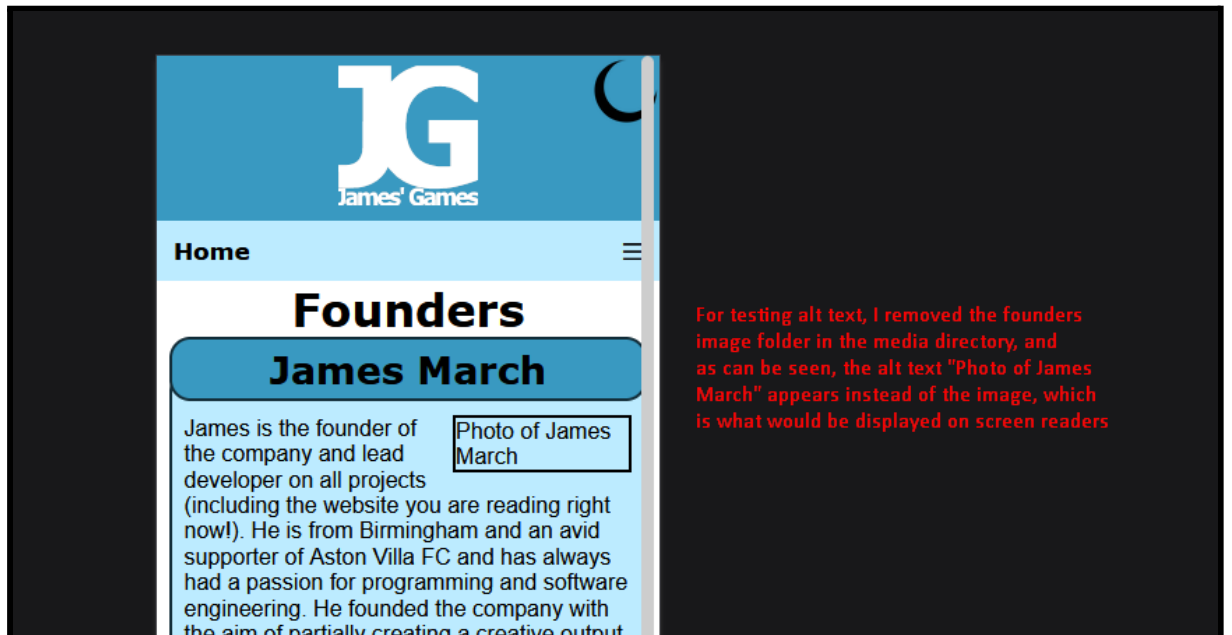


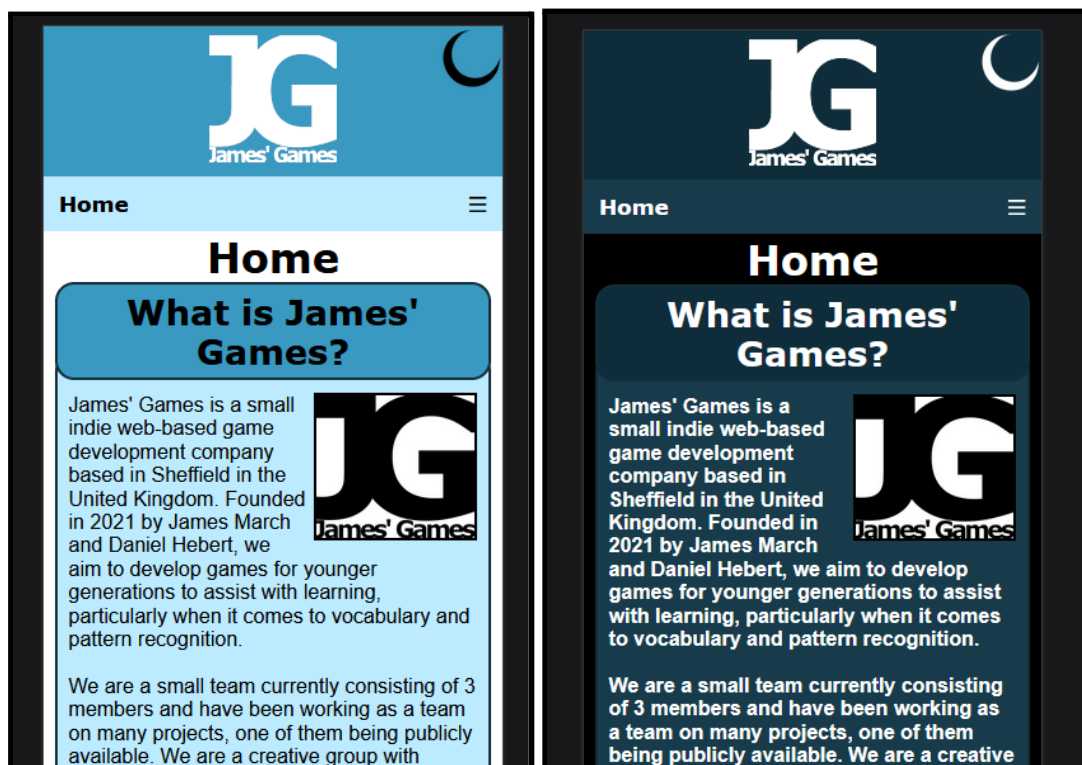
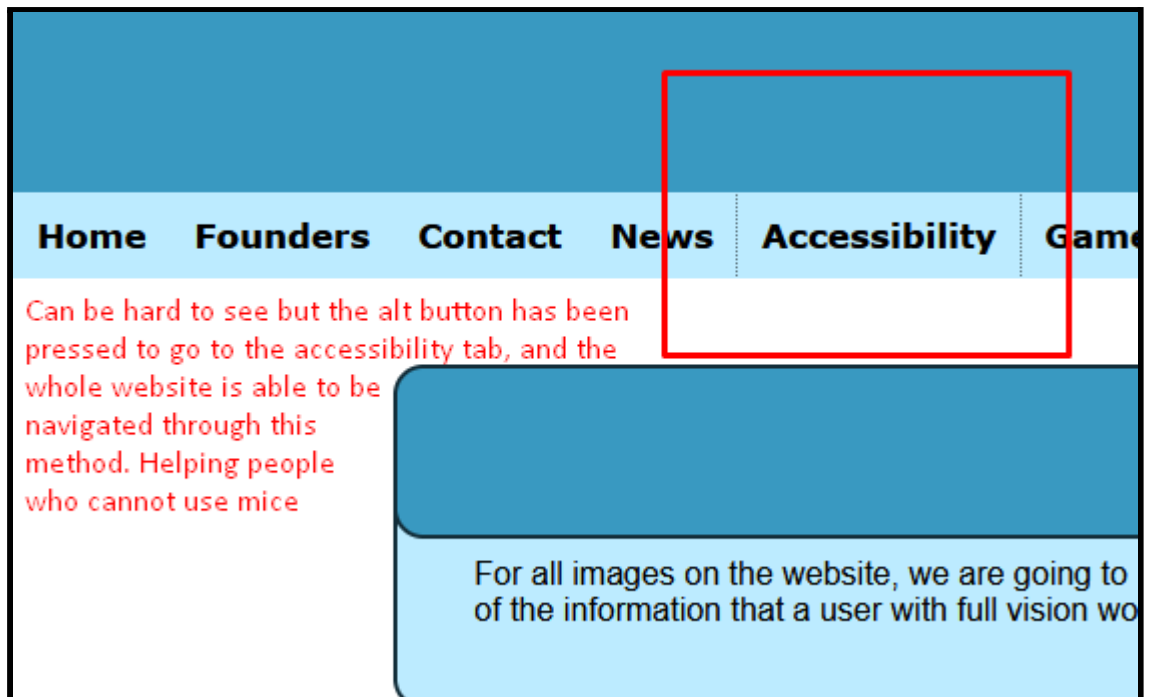


- Because the game canvas used is only 300px wide, it works perfectly and consistently across every device
- The entire website is touch compatible, including the canvas game. This was tested using the touch simulation found in the Firefox emulator



- For testing accessibility features, evidence of them working can be seen below





Side-by-side comparison of light and dark mode